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Attorney Docket No. 2101239-991011

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Reza Esfandiari et al.

Group Art Unit: Not yet assigned

Serial No.: 10/782,598

Examiner: Not yet assigned

Filed: February 18, 2004

Title: **HIGH LINEARITY SMART HBT POWER AMPLIFIERS FOR  
CDMA/WCDMA APPLICATION**

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July 9, 2004



Rosa A. Caviedes

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Prior to examination of the above-identified application, please amend the application as follows:

**Amendments to the Specification** begin on page 2 of this paper.

**Amendments to the Drawings** begin on page 3 of this paper and include both an attached replacement sheet and an annotated sheet showing changes.

**Remarks/Arguments** begin on page 4 of this paper.

**Amendments to the Specification:**

Please replace the paragraph on page 10, paragraph 44, with the following amended paragraph:

The power amplifier 700 comprises a first stage transistor 701 and a second stage transistor 702. The RF input (RFin) is applied through a capacitor 721 and a resistor 719 to the base of the transistor 701. An inductor 713 provides inductive matching of the RF input signal. A series connected resistor 717 and a capacitor 726 provide RF feedback for transistor 701. The output of the first stage is coupled through capacitors 722 and 727 to the input of the second stage (a resistor 718 coupled to the base of the transistor 702), and includes inductive grounding with an inductor 711 between the capacitors 722 and 727. The current generator 600 (Figure 6) provides a bias current with inductive coupling through an inductor 712 to the resistor ~~[[712]]~~ 732. A capacitor 723 is coupled to the emitter of the transistor 702. In one embodiment, the values of the capacitors, inductors and micro strips transmission lines are selected to adapt to the frequency band of 1700 MHz, 1800 MHz and 1900 MHz.

**Amendments to the Drawings:**

The attached sheet(s) of drawings includes changes to Fig. 7. This sheet, which includes Figs. 6-7, replaces the original sheet including Figs. 6-7.

Attachment: Replacement Sheet  
Annotated Sheet Showing Changes